

# **PERMIT TO PENETRATE GROUND OR EXCAVATE SURFACES OF LBNL PROPERTY**

## **ADMINISTRATIVE PROCEDURE – DOCUMENT CONTROL OPERATIONAL PROCEDURE – WORK PROCESS**

### **1.0 OBJECTIVE:**

This procedure defines the steps necessary for the safe penetration of ground, walls, or other existing surfaces of LBNL properties and covers those institutional requirements that must be completed prior to beginning any penetration action in any surfaces in LBNL. Of particular concern is the prevention of contact with live electrical conductors or other significant hazards (i.e., natural gas, water lines, compressed air lines, etc). The intent of this procedure is to minimize the chance of injury or death to personnel and to protect known or unknown buried utility lines. This will minimize disruption of essential services when penetrating or excavating the ground surface of LBNL property. The objectives of this procedure are to:

- A. Maintain employee health/safety.
- B. Protect the environment and real property.
- C. Ensure operational reliability of concealed utility systems.
- D. Ensure that Penetration Permits are tracked, reviewed, approved, distributed, and revised as necessary.
- E. Improve communication with personnel involved in the permit process.

### **1.1 Application:**

This procedure applies to all work that requires penetrations of existing surfaces of LBNL and LBNL property, and leased buildings where the surface penetration work is managed, supervised and controlled by LBNL personnel. The LBNL Permit to Penetrate Ground or Existing Surfaces of LBNL Property (here after known as Penetration Permit) is required for all penetration of any surfaces of a depth greater than 1-1/2 inches.

A Penetration Permit will not be issued if the area cannot be scanned or reliable data on utilities location cannot be obtained.

### **1.2 Scope:**

1. The permit is required for all work performed at LBNL that involves penetration of any landscape ground surfaces, walls, columns, floors, and ceilings deeper than 1-1/2 inches.
2. The permit is valid for 30 calendar days from the time of issuance. The Responsible Individual (RI) may request a 30-day extension provided the Utility Coordinator inspects the site and determines that the work scope, job hazards, and hazard controls of the original permit are still valid.  
  
The initial permit can be issued for greater than 30 days, with written permission from the Facilities Plant Operations Department Head.
3. The permit must list special conditions and potential hazards and controls, and clearly identify equipment and underground utilities that will be affected.
4. This procedure and Penetration Permit only address the hazards and controls directly related to surface penetration. The permit does not address other hazards such as trench access, shoring, traffic control, exposure to chemicals, confined spaces, etc.
5. Exceptions:
  1. Staking in soil using wood stakes no deeper than 6 inches is permitted without a Penetration Permit.
  2. Gypsum board (sheet rock) wall penetrations may be done without a Penetration Permit, provided that the area has been electronically scanned and found to be free of hidden

metal objects, and both sides of the wall have been visually inspected for evidence of hidden objects.

### 1.3 Training and Qualifications:

1. Responsible Individual (RI) shall be formally trained in the requirements of ADMIN-053. All Responsible Individuals shall demonstrate a thorough understanding of the procedure prior to their designation as an RI. The RI is appointed by Management to have oversight over a project requiring surface penetration based on the individual's demonstrated capabilities and experience.
2. Utility Locator: LBNL and Subcontractor.  
The Locator must be trained and must be certified as defined by the professional locator competency standards and performance criteria of the National Utility Locating Contractors Association (NULCA) and instrument manufacturer. The Locator must be competent in the use of a variety of locating technologies.

### 1.4 Method of Performance

1. Any core drilling or saw-cut operations that remove concrete areas greater than 4" in diameter shall require the approval of the LBNL Planning, Design & Construction (PD&C) Structural Engineer.
2. Soil excavation within a 30 inch radius of a marked or exposed utility must be excavated by non-destructive means using appropriate safe technology, such as an air knife, shovel, vacuum, chipping gun with a spade bit, breaker bar or high pressure water excavation. Drills, circular saw, jack hammer, boring equipment, coring equipment, concrete saw, pick, backhoe, or any power excavation machine is not allowed.  
If destructive means are to be used for excavation within 30" after underground utilities are exposed, RI shall identify appropriate mitigation measures and obtain approval from the Plant Operations Department Head.
3. No drilling is allowed within 6" of any marked or exposed utilities unless approval is obtained from the Plant Operations Department Head with the appropriate mitigation measures in place.
4. Contract Document Requirements  
The LBNL Master Specification includes the requirement that the Subcontractor obtains an approved Penetration permit prior to any ground penetration, adhere to the conditions during work, and take financial responsibility for any damage to utilities or other resulting losses.  
PM shall ensure that the following sections of the specifications are in place, revise if necessary for specific project needs.
  1. Master Specification Section 01020, paragraph 1.19.A, Permit to Penetrate Ground or Existing Concrete Surface.
  2. Master Specification Section 01210, paragraph 3.01, Safeguards – Existing Equipment, Underground Utilities and Artifacts.

### 1.5 Roles and Responsibilities

All LBNL employees, subcontractor employees have the authority and obligation to stop the work when unexpected utilities are encountered or any hazards are observed.

1. Responsible Individual (RI)
  - a. Authorizes work.
  - b. Is responsible for the overall performance of the work.
  - c. Is responsible for the safety of job site.
  - d. Corrects implementation of ADMIN-053 and permit procedures.
  - e. Conducts Pre-start briefing to all participating workers.
  - f. Initiates, requests and maintains valid Penetration Permit for the duration of the work.

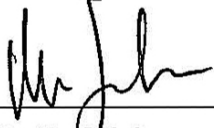

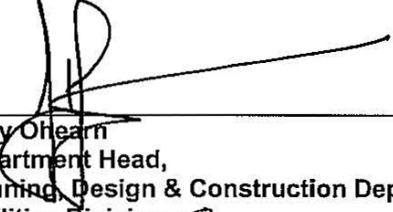
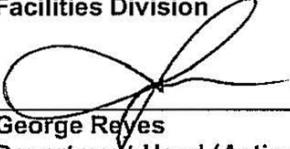
- g. Provides job information to Utility Coordinator.
- h. Resolves unusual conditions encountered such as artifacts.
- i. Requests LBNL Subcontracted Surveyor to determine and record the actual alignment and depth of the located utility line(s).
- j. Inspects excavation site prior to backfill and confirms that the utility's three-dimension coordinates has been recorded by LBNL Subcontracted Surveyor.
- k. Arranges soil compaction test.
- l. Confirms as-built conditions are marked on the subcontractor's set of as-built drawings for LBNL leased buildings.
- m. Ensures that boundary markings remain visible.
- n. Posts signed copy of permit and supporting documents as necessary.
- 2. Utilities Coordinator
  - a. Processes permit application.
  - b. Performs field inspection of job site prior to issuing permit.
  - c. Reviews all applicable documents.
  - d. Researches available configuration documents.
  - e. Ensures Locator personnel are trained and certified as defined by the professional locator competency standards and performance criteria of the National Utility Locating Contractors Association (NULCA) and instrument manufacturer.
  - f. Coordinates Locator activities and ensures latest technologies and appropriate methods are used to locate underground utilities.
  - g. Reviews Locator results with Responsible Individual.
  - h. Identifies limiting conditions on permit.
  - i. Issues permit to Responsible Individual.
- 3. Site Excavation Workers
  - a. Attend and understand pre-start briefing.
  - b. Follow the requirements of permit.
  - c. Stop work and alert supervisor of unusual and unexpected conditions.
- 4. Utility Manager
  - a. Approves permit.
  - b. Manages documentation process.
- 5. EH&S
  - a. Performs construction safety inspection.
  - b. Monitor compliance with permit conditions.
  - c. Provides training resources
- 6. Facilities Plant Operations Department Head
  - a. Evaluates requests for permit period of longer than 30 days
  - b. Evaluates emergency requests for short-time turnaround of permit application.
  - c. Evaluates requests for variances from non-destructive excavation requirements.
  - d. Evaluates requests for drilling within 6" of utilities.

1.6 Addendum:

- a. Draft Memorandum of Understanding and Request for Pub. 3000 Variance between the LBNL Advance Light Source Division, the Facilities Division, and the EH&S Division, dated March 28, 2005.

1.7 Responsibilities and controls:

1. The responsibility for document control remains with the following listed individuals. Revisions to this document can be submitted with justification to the Facilities Utility Manager for consideration. The Facilities Utility Manager will review the revision submittal and seek concurrence and approval. Upon concurrence and approval signatures, the revision will be accepted, accepted in part, or accepted in principal in part, or rejected.

Managed by:		10/2/06
	Martin G Johnson	Date
	Utility Manager, Plant Operations Department Facilities Division	
Concurred by:		10/2/06
	Richard DeBusk	Date
	Manager, Safety Department EH & S Division	
Concurred by:		10/2/06
	Jerry O'Hearn	Date
	Department Head, Planning, Design & Construction Department Facilities Division	
Approved by:		10/2/06
	George Reyes	Date
	Department Head (Acting) Plant Operation Department Facilities Division	

## Glossary of Terms

**Non-destructive Means of Soil Removal:** Soil removal by use of vacuum, or excavated with appropriate safe technology, such as an air knife, shovel, vacuum, pneumatic chipping gun with a spade bit, breaker bar or high pressure water excavation.

**Destructive Means of Soil Removal:** Soil removal by use of powered or heavy equipment such as drills, circular saw, jack hammer, boring equipment, coring equipment, concrete saw, pick, backhoe, or any power excavation machine.

**Soil Excavation:** Soil removal by use of non-destructive and /or destructive means.

**Area Utility Sheets (U-sheets):** Drawings that shows the existing underground utilities in an area of 1,000 feet wide in the East-West directions and 400 feet high in the North-South directions.

**Exterior surfaces:** 5' or more from the building exterior wall surfaces.

**Interior surfaces:** All indoor surfaces including up to 5' from the building exterior wall surfaces.

**LBNL Property:** LBNL property is defined to include all properties within the LBNL site and the leased buildings.

PERMIT PROCESS

2.0 PERMIT PROCESS:

The following process defines the steps for penetration or excavation of any depth greater than 1-1/2 inches at LBNL. NOTE: The roles and responsibilities of Subcontractor will apply to in-house labor performing penetration / excavation activities.

STEP	RESPONSIBLE PERSON	ACTION
1	<p><b>Responsible Individual (RI)</b></p> <p><b>Subcontractor</b></p> <p><b>RI</b></p> <p><b>RI</b></p>	<p><b>STEP 1: PENETRATION PERMIT REQUEST WRC</b></p> <p>The RI is the Laboratory representative requesting the permit and shall ensure that subcontractors are informed about LBNL Penetration Permit requirements so that they will allow for these costs in their bids. The requirement for the LBNL Penetration Permit and underground utilities location prior to excavation must be reviewed at Pre-bid meetings.</p> <p>The subcontractor is instructed to obtain the Penetration Permit from the Responsible Individual (RI).</p> <ol style="list-style-type: none"> <li>1. The Subcontractor requests the RI to initiate the permit request. The request may be made any time after excavation is scheduled, but not so early that conditions may change prior to excavation. For efficiency of scheduling, the request should be made at least 10 working days before Penetration is scheduled to begin. For emergencies, there can be a 3 working day turnaround with Plant Operation Department Head approval. Poor planning does not constitute an emergency. The Subcontractor or RI shall mark on the ground the extent of the excavation with <b>"WHITE"</b> color paint only (per Uniform Paint Color of California Government Code 4216, Underground Service Alert).</li> <li>2. Note: Once the Penetration Permit is issued, the subcontractor is implicitly granted control of the site. The subcontractor is responsible for all new underground utilities installed. As a result, an additional Penetration Permit will not be required if the excavation is within the original boundaries and consistent with the terms of the initial Penetration Permit. If excavation extends beyond the original boundaries or is not consistent with the terms of the initial Penetration Permit, a new Penetration Permit shall be required.</li> <li>3. RI shall request the Penetration Permit through the Work Request Center by completing the Permit Application form (including the application checklist) online to the Work Request Center.</li> <li>4. The RI shall notify the closest Building Manager (s) of the upcoming construction activities.</li> </ol>
2	<b>Utilities Coordinator</b>	<p><b>STEP 2: WO TO UTILITIES COORDINATOR</b></p> <p>Utilities Coordinator will arrange to have NULCA certified personnel to perform the survey. This will include a firm with expertise in locating underground utilities.</p>
3	<b>Utilities Coordinator</b>	<p><b>Step 3: Site Drawing Review</b></p> <ol style="list-style-type: none"> <li>1. Review most current available sub-surface utility maps (Area Utility Sheets (U-sheets) for exterior underground infrastructure utilities and/or building underground utilities if the permit application is for interior surface penetrations.</li> <li>2. Review drawings and other historical documentation which are available in B90F, Project Stick Files, and microfiche system.</li> <li>3. Collect information from knowledgeable employees based on personal recollection of construction in a particular area.</li> </ol>

PERMIT PROCESS *Continued*

STEP	RESPONSIBLE PERSON	ACTION
		<ol style="list-style-type: none"> <li>4. Locate, on prints/maps, all underground utilities in work area.</li> <li>5. Make copies of all relevant drawings.</li> <li>6. Mark area defined by work requested on drawings to be included with permit.</li> <li>7. Review any unexpected problems with RI.</li> </ol>
4	Utilities Coordinator	<p><b>STEP 4: SITE LOCATOR SENSING SURVEY</b></p> <ol style="list-style-type: none"> <li>1. Thoroughly sweep work area with applicable Locator(s). Look for signs of recent excavations, patched asphalt, etc. particularly around nearby mechanical and electrical equipment pads or substations. Any new unrecorded utilities in these areas may extend into the permit area. Disconnected electrical circuits may need to be turned on to provide a flow signal, since they could be crossing the permit area but not be detectable due to lack of current flow. Do not assume anything. If in doubt, get assistance from the appropriate building trades' supervisor and together clear the discrepancies.</li> <li>2. Compare the location and depth of underground utility lines found using Locator with the location and depth shown on prints/maps.</li> <li>3. Clear up all discrepancies between Locator findings and locations shown on prints/maps.</li> <li>4. Locator will mark the center line of buried utilities above ground using Uniform Color Code and marking standard consistent with California Government Code, 4216. Extend marks beyond area to be excavated so they will be visible throughout work.</li> <li>5. Clearly indicate utility lines and shut-off valves on prints/maps.</li> <li>6. A Penetration Permit will not be issued if the area cannot be scanned or reliable data on utilities location cannot be obtained.</li> <li>7. Utilities Coordinator shall take photos of excavation site including boundaries and utilities markings.</li> <li>8. Review any unexpected problems with RI.</li> </ol>
5	Utilities Coordinator	<p><b>STEP 5: PERMIT PREPARATION</b></p> <p>Utilities Coordinator completes the permit, including:</p> <ol style="list-style-type: none"> <li>1. Fill out the Penetration Permit form.</li> <li>2. Prepare notification list of persons/agencies to be notified before penetration begins (if necessary).</li> <li>3. Mark area defined by permit on maps to be included with permit.</li> <li>4. Define requirements during initial survey of specific area with details for concrete excavation and any other special conditions to be met on the Penetration Permit.</li> <li>5. Review any unexpected problems with RI.</li> <li>6. Completes the Permit Checklist.</li> <li>7. Review with Utility Section Manager and obtain approval signature.</li> <li>8. Notify RI that Permit is ready.</li> <li>9. Give Penetration Permit, marked-up copy of prints/maps, and, if necessary, special conditions sheet and notification list to RI.</li> </ol>
6	RI	<p><b>STEP 6: PRE-START MEETING AND SIGN-OFF</b></p> <ol style="list-style-type: none"> <li>1. The RI sets up a Pre-Start Meeting at surface penetration site to issue the permit. The Pre-Start Meeting shall include the Utilities Coordinator, RI, workers who will be performing the work, and the workers' supervisor. For work performed by a prime construction subcontractor, the subcontractor's superintendent or foreman must be</li> </ol>

PERMIT PROCESS *Continued*

STEP	RESPONSIBLE PERSON	ACTION
	<p>RI</p> <p>Utilities Coordinator</p> <p>RI</p> <p>Utilities Coordinator</p>	<p>present.</p> <p>2 RI explain the requirements to all excavation workers including review of site markings, marked-up copy of prints/maps, hold points and, if included, special conditions sheet, and notification list. Workers will read and thoroughly understand all documents.</p> <p>3 The Utilities Coordinator reviews the permit, discussing details and answering any questions. All verbal directions issued during the site meeting, other than those in the permit, must be recorded in the permit.</p> <p>4. The Utilities Coordinator and RI sign the permit, completing LBNL approval.</p> <p>5 The RI issues the permit to the Subcontractors, and obtains the Subcontractor and his employees' signature accepting the terms of the permit. The permit is valid for 30 days from the time of issuance.</p> <p>6 The Utilities Coordinator copies the permit, retaining the original in the Utilities Coordination Office</p>
7	RI	<p><b>STEP 7: POSTING OF PERMIT</b></p> <p>1. The RI shall post the permit, pre-start checklist, and other relevant documents on the job site in a conspicuous location.</p>
8	<p>RI</p> <p>RI, LBNL Construction Safety Engineer</p>	<p><b>STEP 8: RI COMPLIANCE</b></p> <p>1. Read and thoroughly understand Penetration Permit, marked-up copy of prints/maps, Pre-start Checklist, hold points and, if included, special conditions sheet, and notification list from Utilities Coordinator.</p> <p>2. The LBNL Construction Safety Engineer and RI shall confirm permit compliance with signatures, dates, and times. The LBNL Construction Safety Engineer will verify that the approved Penetration Permit is posted conspicuously at the excavation site and readily available to the person (s) doing the work. The LBNL Construction Safety Engineer will inspect the excavation site as necessary to verify Permit conditions are met and safe practices are followed, stopping work and resolving problems as necessary with RI, Utilities Coordinator, and Subcontractor.</p>
9	Subcontractor or In-house Labor Shop	<p><b>STEP 9: PENETRATION WORK BEGINS</b></p> <p><b>HAND DIG ONLY:</b></p> <p>1. Excavation within a 30 inch radius of any marked or exposed utility must be excavated by hand using appropriate safe technology, such as an air knife, shovel, vacuum, pneumatic chipping gun with a spade bit, breaker bar or high pressure water excavation. Drills, circular saw, jack hammer, boring equipment, coring equipment, concrete saw, pick, backhoe, or any power excavation machine is not allowed.</p> <p>If destructive means are to be used for excavation within 30" after underground utilities are exposed, RI shall identify appropriate mitigation measures and obtain approval from the Plant Operations Department Head.</p> <p><b>NOTE:</b> Where possible, shut-off and / or secure located utilities by lock-out/tag-out (LOTO) procedures before the excavation by destructive process is to start (per the Health &amp; Safety Manual, Pub-3000, Chapter 18). All LOTO procedures shall be performed by the subcontractor with LBNL Plant Maintenance Technicians or Electric Shop Electricians and coordinated by the RI.</p> <p>2. Watch for utility lines and indication of utility lines (sand backfill and warning identification tape) while carefully performing work.</p>
10	Subcontractor, RI, Utilities	<p><b>STEP 10: PERMIT/PROGRESS VALIDATION</b></p> <p>1. All modifications to the Penetration Permit shall be written on the permit. No changes to the Permit are allowed without a site visit by the Utilities Coordinator.</p>

PERMIT PROCESS *Continued*

STEP	RESPONSIBLE PERSON	ACTION
	<b>Coordinator</b>  <b>Utilities Coordinator, RI</b>	<p>The specific details of the task and area shall then be authorized by signature (with date and time) of the Utilities Coordinator and other responsible parties involved.</p> <p>2. The permit is valid for 30 calendar days from the time of issuance. The Responsible Individual may request a 30 day extension. The Utilities Coordinator visits the site and evaluates whether the conditions of the Penetration Permit are still valid and applicable. If so, the Utilities Coordinator may issue the extension. Otherwise, a new permit must be initiated.</p>
11	<b>RI</b>  <b>Utilities Coordinator</b>	<p><b>STEP 11: PERMIT REMOVED AND CLOSED</b></p> <p>1. The RI will confirm with the Subcontractor that excavation is complete, including backfill, then remove the permit and notify the Utility Coordinator.</p> <p>2. The Utilities Coordinator will set the electronic permit version to inactive (not current).</p>

PERMIT CHECKLIST

**3.0 UTILITIES COORDINATOR WORKSHEET CHECKLIST:**

Items	Checklists	Yes	No	Comment
1.	Has soil penetration field survey been performed with applicable electronic locator?			
2.	Have As-Built building drawings or Area Utility Sheets (U-sheets) been reviewed?			
3.	Have historical construction project drawings and documents been reviewed?			
4.	Has information from knowledgeable employees based on personal recollection of construction in a particular area been collected?			
5.	Has a site map with enlarged project section showing the extent of the excavation been included?			
6.	Has Project Notification List (Contact Names & Tel. #s) completed?			
7.	Has the RI notified the Building Manager, or Building Manager(s) closest to where there will be construction activities?			

APPLICATION CHECKLIST

4.0 APPLICATION CHECKLIST

This checklist is to be completed by the Responsible Individual (RI) and attached to the Permit Application

Responsible Individual: \_\_\_\_\_ Date Prepared: \_\_\_\_\_ Permit #: \_\_\_\_\_ WO: \_\_\_\_\_

Signature: \_\_\_\_\_

YES	NO	COMMENTS
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**UNDERGROUND INSTALLATION (SEWER, TELEPHONE, FUEL, ELECTRIC, WATER LINES, ETC.)**

1.	Have the excavation boundaries marked with white paint?			
2.	Have program representatives been notified of the excavation?			
3.	Have you identified utilities that need to be maintained in operation during excavation, and arranged to adequately guard and support them to protect the workers and LBNL employees? Describe utilities affected and methods of protection:			
4.	Has an outage request been submitted? Specify:			
5.	If an outage has not been requested, why not?			

**STABILITY OF ADJACENT STRUCTURES**

6.	For excavations that will dig below the level of sidewalks, utilities, foundations, retaining walls, etc do they meet the following criteria?			
	a. Is the excavation adequately supported (i.e., underpinning)?			
	b. Is the excavation in stable rock?			
	c. Has a registered professional engineer determined that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity.			
	d. Has a registered professional engineer determined that the excavation poses no hazard to employees?			

**INSPECTIONS**

7.	Will there be daily pre-start inspections of the excavation site by the RI and General Constructor and documented by the RI and/or LBNL Construction Safety Engineer?			
8.	Will there be inspections of each excavation site documented on an as-needed basis to check for evidence of the failure of			

	protective systems, or the accumulation of hazardous atmosphere and other hazardous conditions?			
9.	Will there be inspections of each excavation site documented after every rainstorm or other occurrence, which may increase hazards?			
10.	Have adequate precautionary measures been implemented to protect workers where there is evidence of a potential hazard to employees working in and around an excavation.			

**EXISTING CONTAMINATION EVALUATION**

11.	Has EH&S evaluated the project site for possible contamination?			
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**CONCRETE PENETRATION**

12.	Will the working area require barricades? If yes, are they in place?			
13.	Will there be requirements for water dust control?			
14.	Is there adequate ventilation in the work area?			
15.	Is there adequate lighting in the work area?			

## 5.0 PRE-START CHECKLIST

The Pre-Start Checklist items are to be completed by the RI during the Pre-Start meeting at the job site.

Responsible Individual: \_\_\_\_\_

Date Prepared: \_\_\_\_\_

Permit #: \_\_\_\_\_

WO: \_\_\_\_\_

Signature: \_\_\_\_\_

YES	NO	COMMENTS
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### UNDERGROUND INSTALLATION (SEWER, TELEPHONE, FUEL, ELECTRIC, WATER LINES, ETC.)

1.	Have all personnel been briefed on the scope, hazards, controls and limiting conditions in the Penetration Permit?			
2.	Have all personnel been briefed regarding the underground utility markings?			
3.	Is the plan in place to adequately guard and support the utilities that need to be maintained in operation?			
4.	Has an outage for utility isolation been performed? Are LOTO locks and tags installed? Describe:			

### STABILITY OF ADJACENT STRUCTURES

5.	For excavations that will dig below the level of sidewalks, utilities, foundations, retaining walls, etc do they meet the following criteria? a. Is the excavation adequately supported (i.e., underpinning)? b. Is the excavation in stable rock? c. Has a registered professional engineer determined that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity. d. Has a registered professional engineer determined that the excavation poses no hazard to employees?			

### INSPECTIONS

6.	Will there be daily pre-start inspections of the excavation(s) site by the RI and General Constructor documented by the RI and/or LBNL Construction Safety Engineer?			
7.	Will there be inspections of each excavation site documented on an as-needed basis to check for evidence of the failure of protective systems, or the accumulation of hazardous atmosphere and other hazardous conditions?			
8.	Will there be inspections of each excavation site documented after every rainstorm or other occurrence which may increase hazards?			
9.	Have adequate precautionary measures been implemented to protect workers where there is evidence of a potential hazard to employees working in and around an excavation.			
	Describe:			

YES	NO	COMMENTS
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**CONCRETE PENETRATION**

10.	Describe PPE to be used by personnel performing penetration such as safety gloves, safety shoes, safety glasses, ground fault interruption & respirators, etc.:			
11.	Does the working area require barricades? If yes, are they in place?			
12.	Have all special requirements for water and dust control been met?			
13.	Is there adequate ventilation in the work area?			
14.	Is there adequate lighting in the work area?			

**HAND DIG ONLY**

15	Is excavation within 30" of a marked or exposed utility?  Excavation within a 30 inch radius of the marked or exposed utility must be excavated by hand using appropriate safe technology, such as an air knife, shovel, vacuum, chipping gun with a spade bit, breaker bar or high pressure water excavation. Drills, circular saw, jack hammer, boring equipment, coring equipment, concrete saw, pick, backhoe, or any power excavation machine is not allowed.			
16	Has Plant Operations Department Head's approval been documented for destructive means of excavation within 30" radius of marked or exposed utility?			
	Describe mitigation measures:			

**HOLD POINT ADMINISTRATION**

17	<p><b>Pothole Excavation:</b></p> <p>After underground utilities are located, the subcontractor shall HOLD and notify the RI. The RI may release the HOLD if the RI verified that the subcontractor have installed reference points consisting of brass nail and hub/flagging at all changes in grade or alignment of the exposed utilities. The Subcontractor shall keep a separate written record referenced to each point with the following information:</p> <ul style="list-style-type: none"> <li>(1) Offset and depth to top and centerline of utility, accurate to 0.1 feet</li> <li>(2) Type of utility (i.e. gas, water, etc.)</li> <li>(3) Size of utility (i.e. 2", 4", 16" wide duct, etc.)</li> <li>(4) Type of material of utility (i.e. cast iron, PVC, etc.)</li> </ul> <p>Backfill with sand and mark results on the ground surface near the pothole with white spray paint. Backfill immediately or install protective cover to prevent tripping or falling into hole.</p>
18	<p><b>Surface Excavation:</b></p> <p>Three working days before backfilling, the Responsible Individual shall notify the LBNL subcontracted Surveyor to obtain the three-dimensional coordinates of all buried utilities. Buried utilities including the pipeline and any other utilities exposed during construction shall not be covered with backfill without the prior approval of the RI. Coordination of this survey requirement is the responsibility of the Subcontractor. LBNL subcontracted Surveyor will be provided by the University when scheduled. The cost for delay or dig-up related to the Subcontractor's failure to schedule the utility survey shall be paid by the Subcontractor.</p>

PERMIT APPLICATION

6.0 PERMIT APPLICATION

	<p>FACILITIES DIVISION</p> <p><b>APPLICATION FOR PERMIT TO PENETRATE OR EXCAVATE SURFACES OF LBNL PROPERTY</b></p>
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**DATE:** \_\_\_\_\_

**THIS IS NOT A PERMIT.**

This is an application for a permit. After the proposed scope of work and the site have been reviewed, and the proposal found acceptable by the Facilities Division, Utility Coordinator, a permit may be issued.

**Instructions**

1. This application must be completed by the LBNL Responsible Individual (RI).
2. Email to Work Request Center, [WRC@lbl.gov](mailto:WRC@lbl.gov).
3. The WRC will send confirmation and job number. You will be contacted by the Utilities Coordinator within 24 hours.

LBNL Responsible Individual (RI): _____		
	NAME	PHONE
Title: _____	Cell Phone No: _____	Mail Stop: _____
Work to be performed by: _____		
GROUP OR CONTRACTING AGENCY	RESPONSIBLE PERSON/CONTACT	PHONE
Project Number _____	Account Number: _____	
Anticipated Start Date: _____	Anticipated Completion Date: _____	

<p><b>Description of Scope of Work:</b></p> <p>Penetration or excavation work is to be performed only inside the permit area as marked and defined below by building numbers, room numbers, and attached maps as necessary.</p> <p>_____</p> <p>_____</p> <p>_____</p> <p><b><u>Road/Deck/Surface Work:</u></b> Type of Surface (Check all that apply)</p> <p>Asphalt _____ Concrete _____ Landscape Surface _____</p> <p>Total Estimated Length _____ Total Estimated Width _____ Estimated Depth (Max) _____</p> <p><b><u>Structural Work:</u></b> (Check all that apply)</p> <p>Wall _____ Floor _____ Deck _____ Walkway _____</p> <p>Coring/Sawing:</p> <p>Area Size: W _____ L _____ Depth: _____ Diameter: _____</p> <p>Anchoring:</p> <p>Diameter: _____ Length: _____ Amount/Total number holes: _____</p>	<p><b>Closest Building</b> _____</p>
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FACILITIES DIVISION  
**PERMIT TO PENETRATE  
EXISTING SURFACES  
OF LBNL PROPERTY**

**EMERGENCY NUMBERS**

LBNL On-Site Fire & Medical 7-911  
LBNL Off-Site Fire & Medical 9-911  
Campus Fire & Medical 9-911  
LBNL Security 510-486-5472

Facilities Utilities 24-hr 5486-5481

**VALID ONLY WHEN ALL APPROVAL SIGNATURES ON THE LAST PAGE HAVE BEEN OBTAINED**

Specific Locations of Excavation or Drilling (describe):

**Road/Deck/Surface Work:** Type of Surface (Check all that apply)

☐ Asphalt ☐ Concrete ☐ Landscape ☐ Other Surface \_\_\_\_\_

Total Length \_\_\_\_\_ Total Width \_\_\_\_\_ Depth (Max) \_\_\_\_\_

**Structure:** (Check all that apply)

☐ Wall ☐ Floor ☐ Deck ☐ Walkway

**Core Drilling/Saw Cutting:**

Area Size: W \_\_\_\_\_ L: \_\_\_\_\_ Depth: \_\_\_\_\_ Diameter: \_\_\_\_\_

**Anchoring:**

Diameter: \_\_\_\_\_ Length: \_\_\_\_\_ Amount/Total number holes: \_\_\_\_\_

**Equipment /Machinery:** (Check all that apply)

☐ Hand tools (shovel, etc) ☐ Electrical Tools (Drills, etc) ☐ Pneumatic Equipment (Jack Hammer, etc)

☐ Heavy Equipment (Backhoe, etc) ☐ Vacuum Excavation ☐ Air Knife ☐ Water Jet

☐ Other / Comments \_\_\_\_\_

**Utility Isolation /LOTO:**

☐ Electrical ☐ Natural Gas ☐ Water ☐ Other: \_\_\_\_\_

**Hazards, Controls, and Limiting Conditions:**



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**Signatures:**

Responsible  
Individual:

Print Name

Signature

Date

LBNL Facilities  
Utilities Coordinator:

Print Name

Signature

Date

LBNL Utilities Section  
Manager:

Print Name

Signature

Date

I have read this permit, (or it has been explained to me) and have been briefed by the RI in the scope, hazards, and controls of this excavation / penetration job.

Subcontractor  
Representative:

Print Name

Signature

Date

Employee:

Print Name

Signature

Date

Employee:

Print Name

Signature

Date

Employee:

Print Name

Signature

Date

Employee:

Print Name

Signature

Date

